BLACK SKIMMER (*Rynchops niger*)

Kathy C. Molina, Section of Vertebrates, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA 90007; kmolina@nhm.org

Criteria Scores

Population Trend	Range Trend	Population Size	Range Size	Endemism	Population Concentration	Threats
0	0	7.5	10	0	10	15

Special Concem Priority

Currently considered a Bird Species of Special Concern (breeding), Third Priority. Included on CDFG's (1992) unprioritized list and on Remsen's (1978) original list as Third Priority.

Breeding Bird Survey Statistics for California

Data inadequate for trend assessment (Sauer et al. 2000).

General Range and Abundance

One subspecies recognized in North America, *R. n. niger*. On the Atlantic coast breeds from southern Massachusetts, Connecticut, New Jersey and New York south to southern Florida and along the Gulf Coast west to Texas, and south to the Yucatan Peninsula. In the West, breeds primarily in coastal southern California and the Salton Sea, and south to coastal Baja California, the Mexicali Valley and the Gulf of California, Mexico (AOU 1957, Collins and Garrett 1996, Molina and Garrett in press); a few pairs have also nested recently in central and northern California (Collins and Garrett 1996). In western Mexico, it is presumed to breed along the Pacific Coast of Sinaloa, Nayarit, and Oaxaca (Howell and Webb 1995), although specific information on colony sites is limited. On the Atlantic coast winters from North and South Carolina south and along the Gulf Coast west to Texas south to eastern Mexico and the West Indies (AOU 1957, Gochfeld and Burger 1994). On the Pacific Coast winters from southern California south to Baja California, in the Gulf of California, and along West Mexico locally from Sonora south to El Salvador and Nicaragua (AOU 1957, Howell and Webb 1995).

May nest in colonies containing a few to several thousand nests. Largest colonies occur on the Gulf Coast with some sites in Louisiana and Texas containing 2,000 pairs or more during the 1980s (Gochfeld and Burger 1994). The average size of colonies along the Atlantic Coast during that same period ranged from 200-500 pairs (Gochfeld and Burger 1994) and are comparable to those in interior and coastal southern California.

Seasonal Status in California

Breeding colonies on the coast and in the interior are generally occupied from mid-April through September, and occasionally into mid-October. The species is a year-round resident in coastal Los Angeles, Orange and San Diego counties. Winters locally in substantial numbers on the coast of southern California, from as far north as San Luis Obispo south to southern San Diego Bay (Gazzaniga 1996). It is usually scarce or absent from the Salton Sea by mid to late October, and is only occasionally observed on Christmas Bird Counts there.

Historical Range and Abundance in California

The species was not recorded in the state prior to 1944.

Recent Range and Abundance in California

Unrecorded from California until 1962 when a single adult was discovered at the mouth of the Santa Ana River in Orange County (AFN 17:66-71). The first documentation of breeding occurred at the south end of the Salton Sea, Imperial County in 1972 (McCaskie et al. 1974). Black Skimmers were subsequently discovered breeding on the coast in San Diego, San Diego County, in 1976 (AB 30:1004). Although their breeding range since has expanded north along the Pacific coast to San Francisco Bay, the majority of the breeding population occurs in coastal southern California and the Salton Sea. Nesting sites and the year of colonization, given in chronological order (unless stated otherwise reference is Collins and Garrett 1996), are Orange Co.: Bolsa Chica Reserve (1985), Upper Newport Bay (1986), and Seal Beach National Wildlife Refuge (NWR, 1986); Santa Clara and Alameda counties: south San Francisco Bay (1994, Layne et al 1996); San

Diego Co.: Batiquitos Lagoon (1995, Whelchel et al. 1996); and Los Angeles Co.: Los Angeles harbor (1998, FN 52:503). In the central interior of the state, one pair bred in Kings County in the Tulare Lake basin in 1986 (AB 40:1251).

Collins and Garrett (1996) estimated the state's total breeding population size at 1,200 pairs in 1995. The colony sites supporting the largest breeding populations are the Salton Sea, Bolsa Chica, Upper Newport Bay, south San Diego Bay, and Los Angeles Harbor. Over 75% of the population annually occurs at three sites (the Salton Sea, coastal Orange County at either Bolsa Chica or Upper Newport Bay, and San Diego Bay). The median colony size from 1990 through 2000 for the Salton Sea was 300 pairs (range = 80 to 487 pairs, Molina 1996, Molina unpubl. data) while the median number of nest attempts at Bolsa Chica was 295 (range: 162 to 438, Collins and Garrett 1996, Collins, unpubl.data). The colony at Upper Newport Bay has been continuously active from 1990 through 2001, although it has not been consistently censused. Counts taken in 1995 and 1996 indicated that 350 to 400 pairs nested there (M. Taylor, pers. comm.), and Collins (unpubl. data) estimated up to 200 pairs in 2001. Assessment of population size at San Diego Bay is less certain as neither the number of pairs or number of nest attempts have been consistently reported for all years during this period. However, inspection of unpublished reports (Stadtlander 1993, Terp and Pavelka 1999, Patton 1999) suggests that the San Diego colony probably contains 300-400 pairs annually. At Los Angeles Harbor over 100 nest attempts were made in 1999 and 2000, (K. Keane, unpubl. data). Nesting has been sporadic at Seal Beach NWR since colonization in 1986; fewer than five pairs nested in 1999 and 2000 (C. Collins, unpubl. data). A few pairs continue to nest on the recently contructed island in Batiquitos Lagoon (P. Unitt, pers. comm.).

Ecological Requirements

Because of its ground nesting habit, this colonial waterbird requires large areas of bare earth sufficiently isolated from terrestrial predators and other disturbances. Colonies most often form on small constructed islands or on isolated sections of eroded impoundment levees. The nesting

colony at Los Angeles Harbor formed on a temporary dredged fill site slated for future development. Usually nests with terns but may form colonies of only conspecifics (Molina, unpubl. data). Nesting associates commonly include Caspian (*Sterna caspia*), Elegant (*S. elegans*), Gull-billed (*S. nilotica*) and Royal (*S. maxima*) terns and Black-necked Stilts (*Himantopus mexicanus*) and American Avocets (*Recurvirostra americana*).

In winter, flocks commonly roost on urban beaches well above the tide line or on mud flats in estuaries. Beach sites that are habitually used by skimmers are often associated with estuaries or protected harbors and near the mouths of rivers or other drainage channels.

Forages for small fish and possibly crustaceans (Leavitt 1957) in calm and shallow waters such as in harbors, lagoons, bays, estuaries, ponds, and river channels. Thought to be largely a nocturnal feeder, skimmers forage singly or in flocks of 3-4 individuals. At the Salton Sea a marked peak in foraging activity appears to occur at or near dusk although feeding activity occurs throughout the diurnal period especially when adults are provisioning young (Molina, unpubl. data). The foraging activity of skimmers nesting at Bolsa Chica was significantly greater at night than during the day, with a distinct peak again occurring at dusk and another at dawn (Wilson 1995).

Threats

The bulk of the state's breeding population is concentrated among just a few sites along the Pacific coast from Los Angeles, Orange, and San Diego counties, and at the Salton Sea, Riverside and Imperial counties. Perhaps the greatest threat to the long-term viability of the breeding population is the apparent shortage of suitable nesting habitat. The highly localized and restricted nature of its present breeding range is further exacerbated by the continued loss of nesting habitat as a result of erosion to small islets at the Salton Sea (K. Molina, unpubl.) or losses due to new port development in areas such as Los Angeles Harbor. Where Black Skimmers nest on small islets and in proximity to the highly aggregated colonies of Elegant Terns, such as at Bolsa Chica, and perhaps in San Diego, the poor reproductive success that is sometimes experienced by them may be due to

overcrowding as the very cohesive behavior of the Elegant colony interferes with skimmer nest attendance (C. Collins pers. com.). Large roosting aggregations of pelicans and cormorants have occasionally contributed to failures of Black Skimmer colonies at the Salton Sea (AB 46:1178, Molina, unpubl. data).

The proximity of urban development and the associated levels of increased disturbance by humans, pets, and feral animals can disrupt the nesting attempts of entire colonies. In the interior, disturbances by humans and predators that cause repeated upflights of birds, interrupting nest attendance for even brief periods of time, potentially subject eggs and young chicks to lethal high temperatures at the Salton Sea (Molina 1999). Such disturbances at both coastal and interior sites also increase opportunities for predation by gulls and other opportunistic avian predators which may have significant impacts on nesting success (Molina 2000).

Prolonged periods of inclement weather during the hatchling phase have caused high levels of chick mortality in the eastern U. S. (Gochfeld and Burger 1994). While such weather events may be relatively infrequent in the west, substantial clutch losses may occur after rainstorms transform the usually dry, silty-clay surfaces of most nesting areas into a sticky substrate that causes eggs to adhere to the bare nest scrape (Molina 1996). Such adherence frequently results during frequent belly-soaking and egg-wetting behavior of incubating and brooding adults, particularly at the Salton Sea (Grant 1982, Molina 1999). In Baja California and among east coast colonies, regular tidal inundations have affected the hatching success of skimmer colonies (Peresbarbosa-Rojas and Mellink 2001, Gochfeld and Burger 1994). Because California skimmer colonies form in areas and on surfaces that are largely protected from great tidal fluctuations, the threat of flooding appears to be minimized. However, wave action caused by high winds may inundate nests on low lying or eroding islets.

Few analyses of organochlorine or heavy metal contamination in California Black Skimmers have been performed at either coastal or interior sites. While no adverse impacts to reproduction

could be demonstrated directly, organochlorine and selenium levels observed in a limited sample of skimmer eggs from the Salton Sea warranted further consideration (Molina unpubl. data, C. Roberts, pers. comm.). Population declines in Texas in the 1980s were not believed to be related to contamination by these compounds. Levels of heavy metals such as mercury and selenium and of PCBs in this population were below levels known to be toxic to embryos (Gochfeld and Burger 1994).

Skimmers do come in contact with oil that is deposited on beaches as birds with oiled plumage are often observed on Santa Barbara and other southern California beaches in winter. Such contamination is usually limited to the feet and to the spotting of a few feathers on the birds' ventral surface. The effects of ingestion of oil during preening is poorly understood. Catastrophic oil spills that impact large sections of shoreline habitat could adversely affect important loafing and foraging areas.

Management and Research Recommendations

- Protect and maintain all existing nesting habitat.
- Modify existing nesting habitat to enhance substrate and isolation from terrestrial predators and human intruders
- Establish additional colony sites, particularly at the Salton Sea, but also at coastal sites such as Bolsa Chica, where crowding and interference by densely aggregated heterospecifics appear to be influencing nesting success.
- Protect productive foraging areas that may be especially vulnerable to contamination such as protected inlets, bays and lagoons.
- Conduct studies of diet, foraging and provisioning behavior, as well as that of nest attendance to elucidate factors that influence the low apparent reproductive success at some coastal colony sites.

- Conduct additional studies of demography to determine the degree of metapopulation mixing among breeders at sites within the southern California - Baja California region.

Monitoring Needs

To date, only Taylor's (1997) study has attempted to address the demographics of Black Skimmers in the state. Estimates of annual productivity are lacking for most colonies and rates of long-term survival and recruitment into the breeding population have yet to be examined. Population size should be monitored annually, or at least every other year using a monitoring scheme that standardizes count methods across colonies. Standardized indices of reproductive success should also be developed as some colony sites, particularly on the coast (e.g. Los Angeles Harbor, Bolsa Chica and San Diego Bay), often attract large numbers of breeding pairs but result in poor productivity that can not be explained by predation alone.

Studies of diet, and foraging and provisioning behavior, as well as that of nest attendance would also be helpful in elucidating the important factors influencing the low apparent reproductive success at some colony sites.

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